PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 :		(11) International Publication Number:
H04M 11/00, 1/00, H04R 9/00, G06F 13/00	A1	WO 98/48563
		(43) International Publication Date: 29 October 1998 (29.10.98)

(21) International Application Number: PCT/IL98/00188

(22) International Filing Date: 20 April 1998 (20.04.98)

(30) Priority Data:
120710 20 April 1997 (20.04.97) IL

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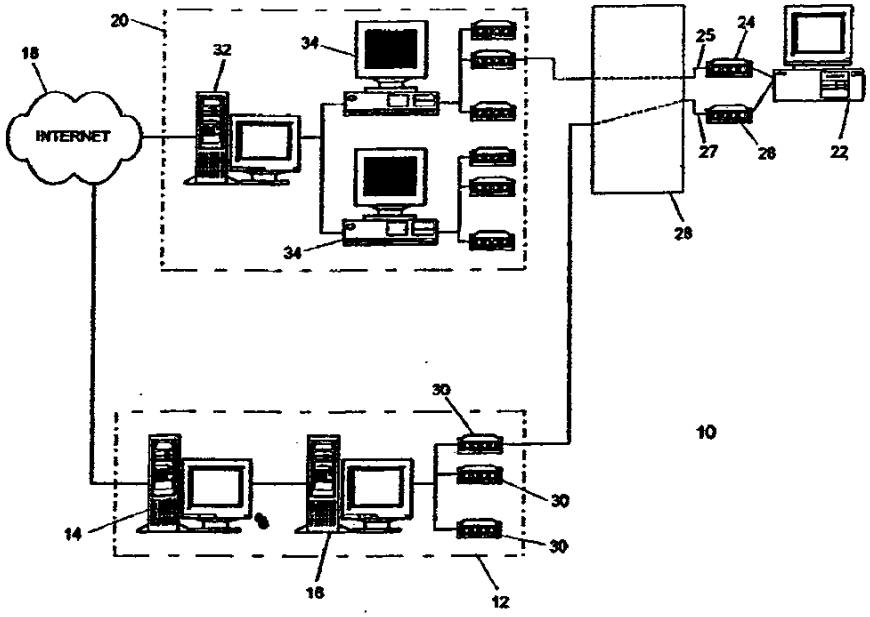
(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: SYSTEM AND METHOD FOR RETAIL OVER A NETWORK



(57) Abstract

A retail system for purchasing goods over a computer network comprising a point of sale (4) connected to a network, a transactions computer (16), a purchaser network computer (22) communicating with the point of sale (14) for ordering goods therefrom, which is also connected via a PST to the transactions computer (16), and means for activating the connection between the computer station and the point of sale (14) during ordering and connection to the transactions computer (16) during payment for completing said purchase.

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SYSTEM AND METHOD FOR RETAIL OVER A NETWORK

FIELD OF THE INVENTION

The present invention relates to a system and method for retail over an integrated computer and telephony network generally and more particularly to a system and method for purchasing goods via a computer network, such as the INTERNET and for paying for that purchase via a telephony network, such as over the conventional PSTN telephony network.

BACKGROUND OF THE INVENTION

Retail over computer networks, in particular over the INTERNET, is well known and widely used. In one known method both purchase and payment are done over the INTERNET, wherein the purchaser provides is debit or credit card number to the vendor who charges him accordingly. However, large number of people are hesitant to use this retail method since they are exposed to a third party capturing their credit or debit card number and making improper use thereof causing them and the debit/credit company significant monetary damage.

State of the art solution for solving this problem of lack of security in INTERNET based transaction are based on encryption technology. In one typical solution, both the vendor and the purchaser are using encrypted messages so as to minimize somewhat the exposure of the purchaser

credit/debit card number being captured by a third party. One disadvantage of encryption in this environment is that financial transaction are typically short with some of the numbers fixed (e.g. four digits of the credit/debit card characterize the credit/debit card company) making it rather easy to brake the encryption.

In another solution, the vendor and purchaser enter into separate pre-purchase agreements with a third party, typically the credit/debit card company, which then debit the purchaser off line for its INTERNET purchase. This method is complicated because it requires pre-arrangements with this third party and it adds additional costs to the transaction which makes the goods purchased more expensive.

SUMMARY OF THE INVENTION

The present invention provides an improved retail system and method for purchasing over a computer network, preferably but not necessarily the INTERNET.

According to the present invention, the selection of goods is done over the network while payment therefor is done via the telephony network without the purchaser realizing same or required to do additional steps as compared with purchase for which payment is done over the network as well.

According to one aspect, the present invention provides a retail system for purchasing goods over a computer network which includes a point of sale connected to said network, a transactions computer, at least one purchaser network computer communicating with said point of sale for ordering good therefrom, said purchaser computer also connected via a PST to said transactions computer, and means for activating said connection between said computer station and said point of sale during ordering and said connection to said transactions computer during payment for completing said purchase.

In one embodiment, the purchaser network station is connected to said network via a first telephone modem line and to said transactions computer with second telephone line and wherein said means for activating said first connection and said second connection include means to indicate said purchaser network station to activate the telephone line with said transaction computer once said order is completed.

In another embodiment, the network station is connected via a telephone line to said point of sale and via said same telephone line to said transaction computer and wherein said means for activating comprising means for switching between said first connection and said second connection.

The means for switching may be provided by the telephony central office in which case the central office preferably employs the waiting call function for the switching or by the ISP to which said purchaser computer is connected. In one option, the ISP connects to said transactions computer in the purchaser name.

In accordance to yet another aspect of the present invention, the point of sale provides over said network a purchase serial number or a random serial number used by the purchaser to check whether to provide his credit/debit card number to said transaction computer via said telephony line during payment.

According to another aspect of the present invention, there are provided methods for purchasing goods over a computer network employing the system of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood and appreciated more fully from the following detailed description taken in conjunction with the appended drawings in which:

Fig. 1A is a schematic block diagram of a system for retail, constructed and operative in accordance with one embodiment of the present invention;

Fig. 1B is a schematic flow chart illustrating the method of operating the system of Fig. 1A;

Fig. 2A is a schematic block diagram of a system for retail, constructed and operative in accordance with a second embodiment of the present invention;

Fig. 2B is a schematic flow chart illustrating the method of operating the system of Fig. 2A;

Fig. 2C details the disconnection and reconnection steps of Fig. 2B;

Fig. 3 is a schematic block diagram of a system for retail, constructed and operative in accordance with a third embodiment of the present invention; and

Fig. 4 is a schematic block diagram of a system for retail, constructed and operative in accordance with a fourth embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Reference is now made to Figs.1A and 1B. Fig. 1A illustrates an system for retail, generally referenced 10, constructed and operative in accordance with an embodiment of the present invention and Fig. 1B illustrates the operation thereof.

System 10 is operative in a packet switched network which is preferably the INTERNET to enable purchase of goods over the INTERNET and payment for these purchases over a telephony network.

System 10 comprising a vendor retail system 12 including a point of sale or a vending unit, vendor web server workstation 14 in the illustrated embodiment, and a payment or transaction unit which is transaction computer workstation 16 in the illustrated embodiment. Vending unit 14 is operative to offer goods for purchase over the INTERNET, therefore it is connected to the packet switched network, schematically referenced 18 and therefrom via an INTERNET Service Provider (ISP) system 20 to a plurality of clients 22 connected to the INTERNET with modem 24.

In the illustrated embodiment, client 22 has two telephone lines and two modems, modem 24 connecting client 22 to ISP 20 via telephone line 25 and central office 28 and modem 26 connects client 22 to payment transaction computer 16 via line 27, central office 28 and one of ports 30.

The operation of system 10 is described with reference to Fig. 1B. In step 52 a customer connects to the INTERNET with its client computer 22 via his ISP 20. In the illustrated embodiment the ISP is a relatively large ISP

operative through a central ISP web server 32 and a plurality of remote pops 34 to one of which client computer 22 is connected.

In step 54, the customer surfs the INTERNET and connects to the vendor's web server 14 while surfing the INTERNET using any known surfing engine, such as the Netscape Navigator, commercially available from Netscape of California, USA. In step 56 the customer selects the goods he likes to purchase from the vendor's list displayed in his site. In step 58 the customer confirms that the lists of goods he wants to purchase and the sum to be paid for the purchase.

In step 60 the payment transaction begins with the vending unit 14 transmits to the customer computer via the INTERNET a telephone number of his transactions computer 16, a purchase serial number or a random number and the details of the purchase, i.e. the items purchased and the purchase sum. These details are being send to transactions computer 16 as well or originated therefrom.

In step 62, the client computer receiving the purchase details dials automatically to transactions computer 16 via the conventional telephony network using its second modem 28. In step 64, transactions computer 16 confirms that the purchase serial number and provides the customer again the purchase sum and optionally the purchase details. In this manner both the purchaser and the vendor are verified as to the identity of the other party and the customer can provide his credit/debit card number to transaction computer 16 as indicated by step 66. The customer also provides an address for mailing

the goods purchased and any other details, such as ID number in any program providing discounts or bonus miles for such purchase. The transaction is then completed by the vendor by charging the credit/debit card of the purchaser in the manner known in the art (step 68).

It will be appreciated that the retail method of Fig. 1B is advantageous both in term of transaction security and computer operation since it is being done as a background task using client 22 second modem 28 while the user can continue with any other task or surfing the INTERNET without the possible adverse effect of providing the credit/debit card number of the INTERNET.

Figs. 2A and 2B illustrate a system and a method of operating same, respectively, according to a second embodiment of the present invention. The embodiment of Figs. 2A and 2B differs from that of Figs. 1A and 1B in that the client 22 has only a single modem 24.

In this embodiment, steps 52 through 60 are similar to those in the method of Fig. 1B, however, client 22 is then disconnected from the INTERNET as indicated by step 61 and only than steps 62 to 66 continue. Step 61 can be manual or automatic.

In another embodiment when the vendor is also the ISP of client 22; step 61 is replaced by a step of momentarily disconnect client 22 from the INTERNET for completing steps 62 - 66. Immediately after steps 62 - 66 are completed clients 22 connection to the INTERNET is reestablished by his ISP as indicated by step 70.

Fig. 2C illustrates the momentarily disconnection of the customer from his ISP in order to complete the transaction via the conventional telephone line with transaction computer 16 and the reestablishment of the connection in more details.

In steps 80 and 82 illustrating an exemplary embodiment to carry out step 61 of Fig. 2B, computer 22 first requests temporary disconnection of the current INTERNET session from his ISP (step 80) and receives in return a session code number from ISP 20 after which the connection is being disconnected (step 82).

Steps 84 through 90 illustrates an exemplary embodiment to carry out step 70 of reestablishing the connection (step 70 in Fig. 2B). In step 84 computer 22 calls again ISP 20. In step 86 a connection is established, in step 88 computer 22 sends the session code number which is received by the ISP 20 which in turn continues the previous INTERNET session as indicated by step 90.

Fig. 3 illustrateS another embodiment of the present invention. In Fig. 3, the switching between the INTERNET connection and the transaction session is done in the central office 28 using the waiting call function schematically illustrated by box 38 which holds one line on hold while activating the other line.

Accordingly, box 38 keeps the connection to the INTERNET on hold while activating the connection between client computer 22 and transactions computer 16 and then reactivates similarly to step 70 (Fig. 2B) the

connection to the INTERNET while disconnecting the connection to transactions computer 16 while all other steps are similar to that of Fig. 1B.

In the embodiment of Fig. 4, the telephone connection between client computer 22 and transactions computer 16 is initiated by the ISP. According to this embodiment in step 61 the user is indicating his ISP that he requires a telephone call and the ISP connects it to transactions computer 16 as indicated by line 39.

It will be appreciated that the embodiments described above are set for exemplary purposes only and any other embodiment in which a conventional telephone connection is used for transactions purposes for completing a purchase over the INTERNET is intended to be covered by the present invention.

It will also be appreciated that while the embodiments described above do not include encryption, encryption may be added as another security level to any of the embodiments of the present invention.

It will further be appreciated by persons skilled in the art that the present invention is not limited to what has been particularly shown and described hereinabove. Rather, the scope of the present invention is defined only by the claims that follow:

CLAIMS

1. A retail system for purchasing goods over a computer network comprising:

a point of sale connected to said network;

a transactions computer;

at least one purchaser network computer communicating with said point of sale for ordering goods therefrom, said purchaser computer also connected via a PST to said transactions computer; and

means for activating said connection between said computer station and said point of sale during ordering and said connection to said transactions computer during payment for completing said purchase.

2. A system according to claim 1, wherein said purchaser network station is connected to said network via a first telephone modem line and to said transactions computer with second telephone line and wherein said means for activating said first connection and said second connection include means to indicate said purchaser network station to activate the telephone line with said transaction computer once said order is completed.

3. A system according to claim 1, wherein said network station is connected via a telephone line to said point of sale and via said same telephone line to said transaction computer and wherein said means for

activating comprising means for switching between said first connection and said second connection.

4. A system according to claim 3 wherein said means for switching are provided by the telephony central office.

5. A system according to claim 4 wherein said central office employs the waiting call function for said switching.

6. A system according to any of the preceding claims wherein said network is the INTERNET.

7. A system according to claim 6 wherein said means for switching are provided by the ISP to which said purchaser computer is connected.

8. A system according to claim 6 wherein said ISP connects to said transactions computer in the purchaser name.

9. A system according to any of the preceding claims wherein the point of sale provides over said network a purchase serial number used by said purchaser to check whether to provide his credit/debit card number to said transaction computer via said telephony line during payment.

10. A system according to any of the preceding claims wherein said transaction via telephony line is transparent to said purchaser.

11. A method for purchasing goods over a computer network using a computer network station comprising:

connecting to a point of sale connected to said network;

communicating with said point of sale for ordering goods therefrom;

communicating with a transactions computer via a telephony connection for paying for said purchased goods; and

activating said connection with said point of sale during ordering and said connection to said transactions computer during payment for completing said purchase.

12. A method according to claim 11, wherein said purchaser network station is connected to said network via a first telephone modem line and to said transactions computer with second telephone line and wherein said step of activating said first connection and said second connection include the step of indicating said purchaser network station to activate the telephone line with said transaction computer once said order is completed.

13. A method according to claim 11, wherein said network station is

connected via a telephone line to said point of sale and via said same telephone line to said transaction computer and wherein said step of activating comprising the step of switching between said first connection and said second connection.

14. A method according to claim 13 wherein said step of switching is provided by the telephony central office.

15. A method according to claim 14 wherein said central office employs the waiting call function for said switching.

16. A method according to any of the preceding claims wherein said network is the INTERNET.

17. A method according to claim 16 wherein said step of switching is provided by the ISP to which said purchaser computer is connected.

18. A method according to claim 16 wherein said ISP connects to said transactions computer in the purchaser name.

19. A method according to any of claims 11 - 18 wherein the point of sale provides over said network a purchase serial number or a purchase random number used by said purchaser to check whether to provide his credit/debit card number to said transaction computer via said telephony line

during payment.

20. A method according to any of claims 11 - 19 wherein said transaction via telephony line is transparent to said purchaser.

21. A system according to any of claims 1 - 10, substantially as described hereinabove.

22. A system according to any of claims 1 - 10, substantially as illustrated in any one of the drawings.

23. A method according to any of claims 11 - 20, substantially as described hereinabove.

24. A system according to any of claims 11 - 20, substantially as illustrated in any one of the drawings.

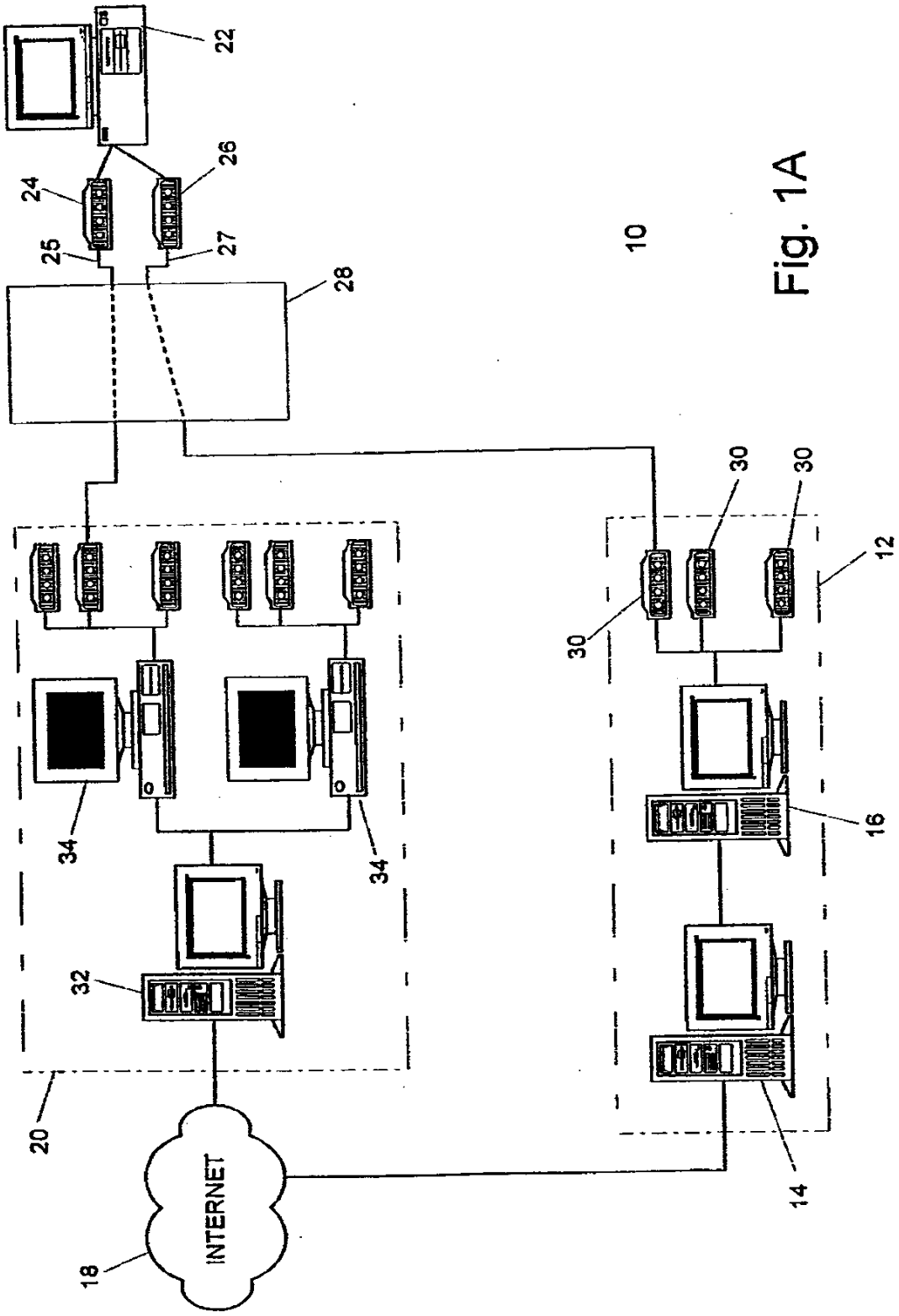

Fig. 1A

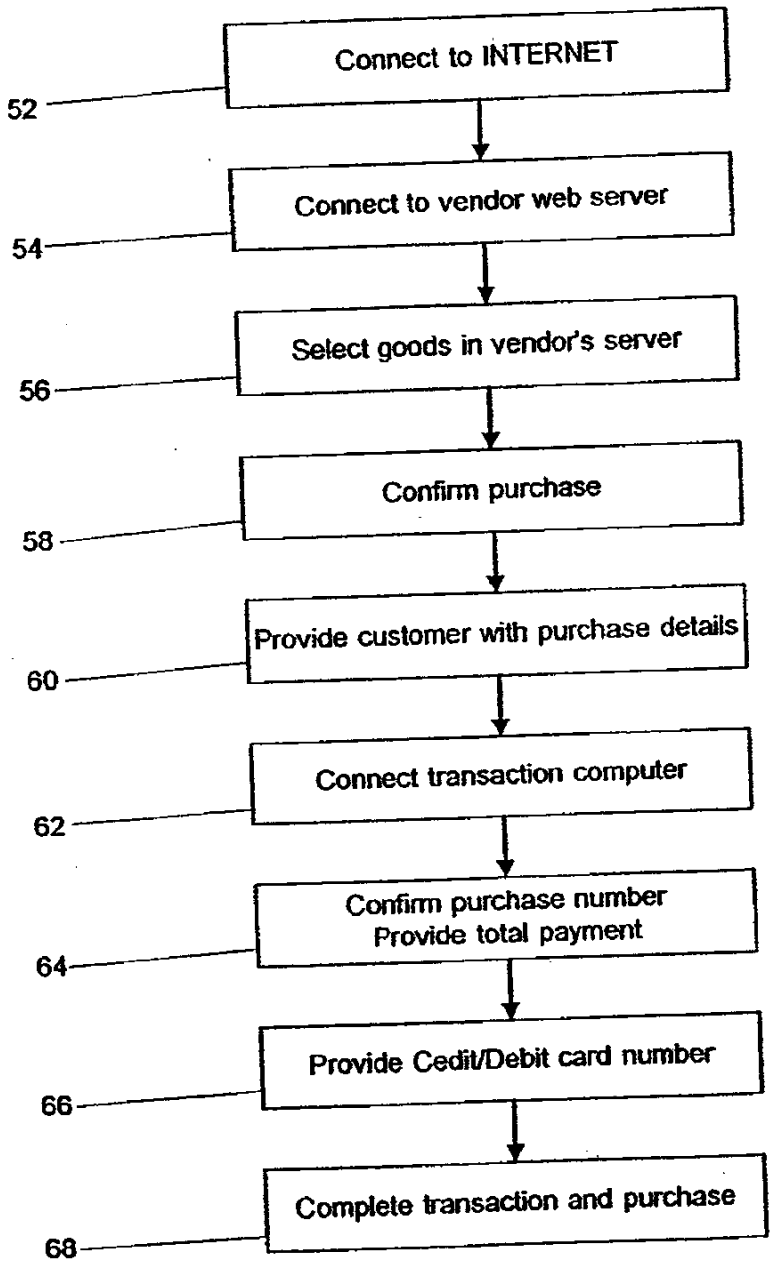
Connect to INTERNET
52
Connect to vendor web server
54
Select goods in vendor's server
56
Confirm purchase
58
Provide customer with purchase details
60
Connect transaction computer
62
Confirm purchase number
Provide total payment
64
Provide Cedit/Debit card number
66
Complete transaction and purchase
68

Fig. 1B

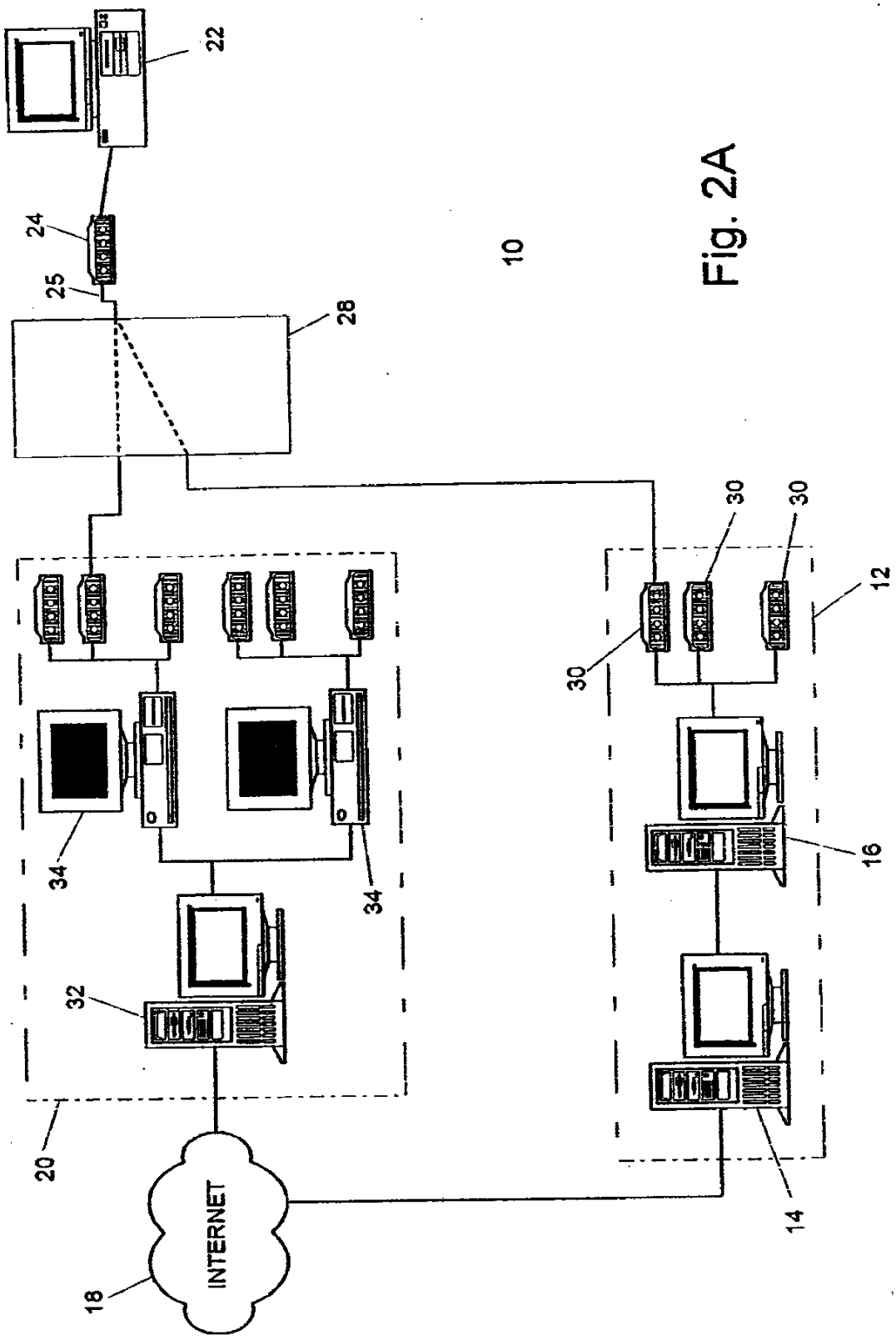

Fig. 2A

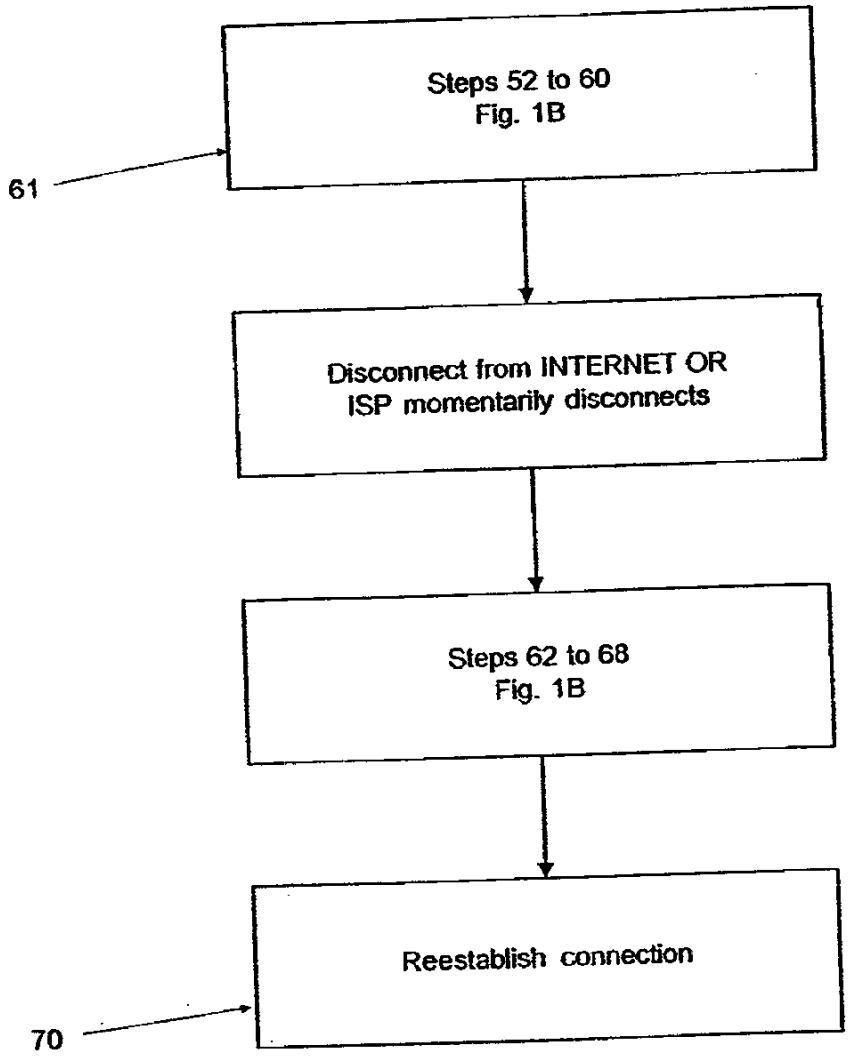
Steps 52 to 60
Fig. 1B
61
Disconnect from INTERNET OR
ISP momentarily disconnects
Steps 62 to 68
Fig. 1B
Reestablish connection
70

Fig. 2B

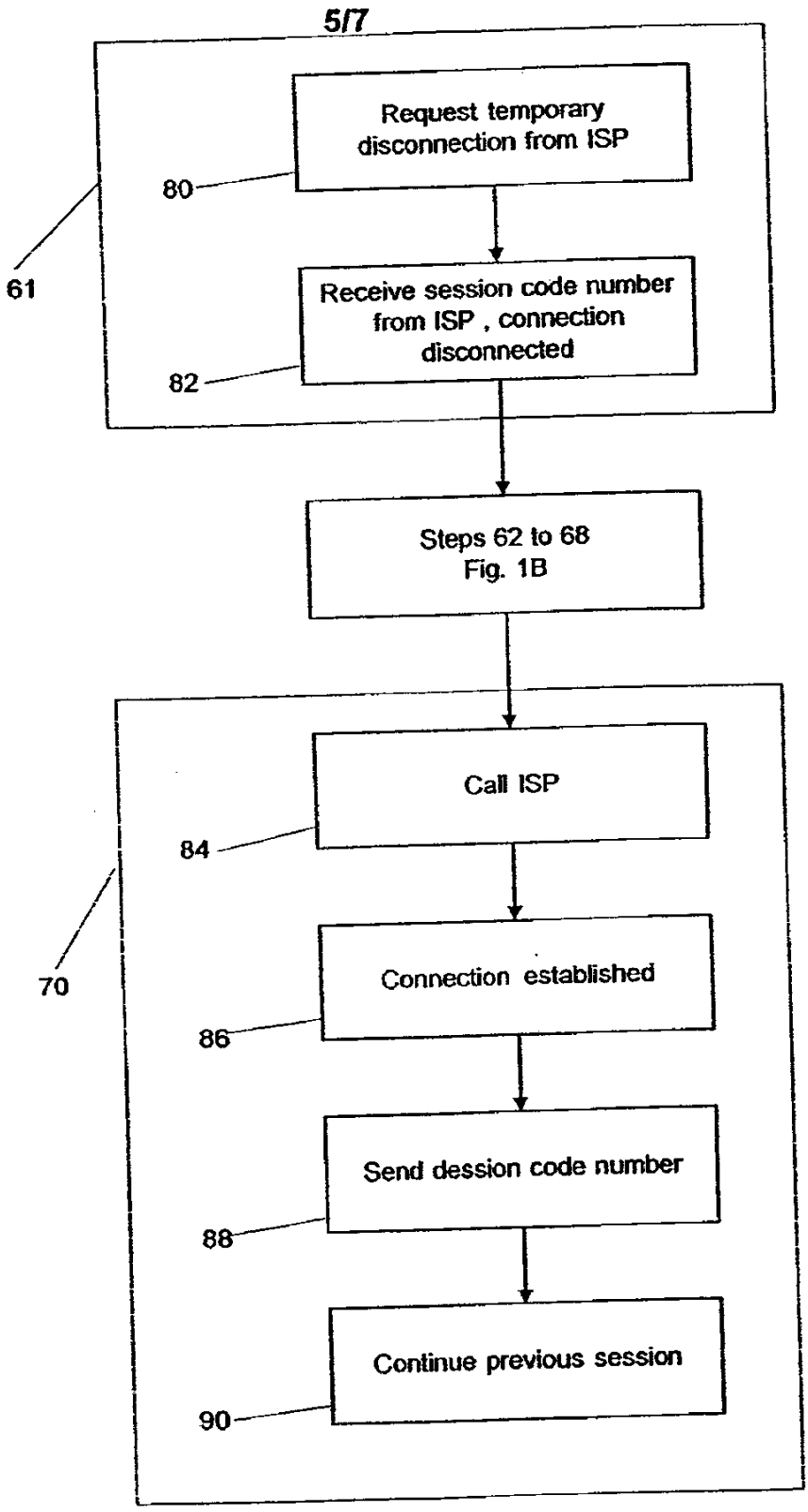
Request temporary disconnection from ISP
80
61
Receive session code number from ISP , connection disconnected
82
Steps 62 to 68 Fig. 1B
Call ISP
84
70
Connection established
86
Send dession code number
88
Continue previous session
90

Fig. 2C

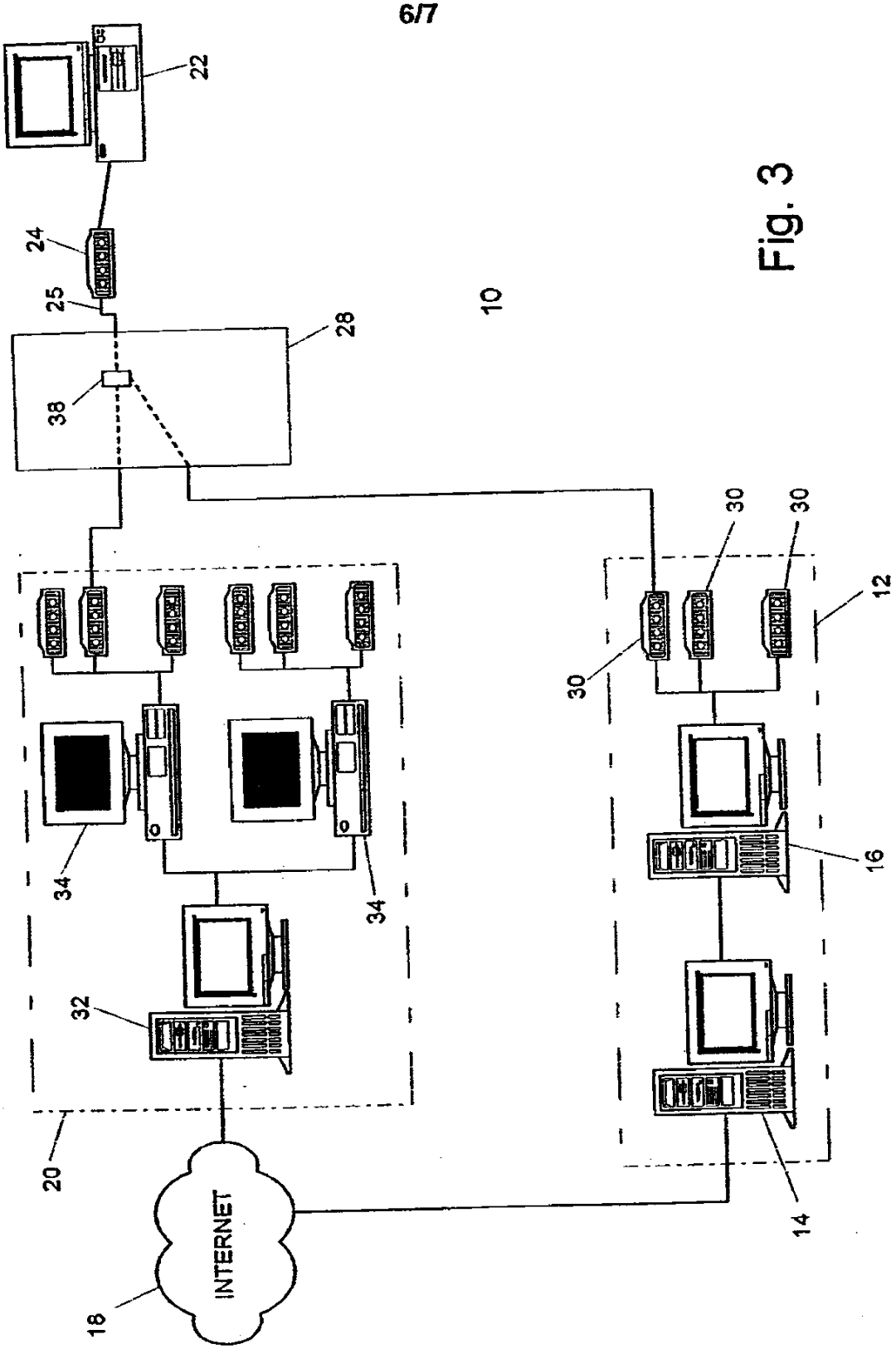

Fig. 3

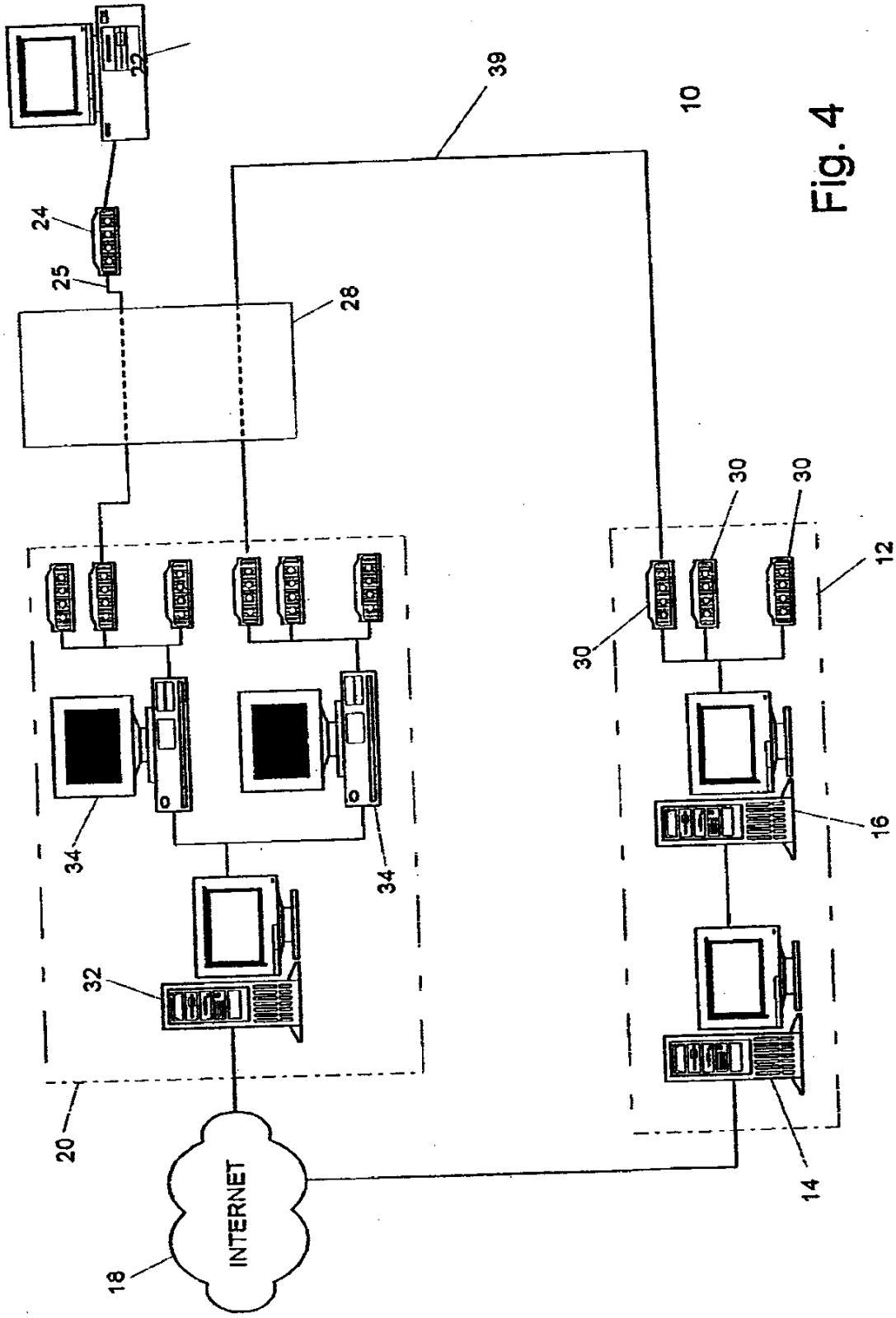

Fig. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL98/00188

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :H04M 11/00, 1/00; H04R 9/00; G06F 13/00
US CL :379/93.12; 380/24, 25; 705/40

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 379/93.12; 380/24, 25; 705/40

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS
search terms: computer, connected, different, network

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	US 5,729,594 A (KLINGMAN) 17 March 1998, col. 8, lines 1-65	1-24
Y,P	US 5,794,221 A (EGENDORF) 11 August 1998, col. 2, lines 4-67	1-24
Y,P	US 5,757,917 A (ROSE ett al) 26 May 1998, col.6, lines 5-66	1-24
A	US 5,351,296 A (SULLIVAN) 27 September 1994, col. 10, lines 1-66	1-24
Y	US 5,315,641 A (MONTGOMERY et al) 24 May 1994, col. 4, lines 1-65	1-24
Y	US 5,357,563 A (HAMILTON et al) 18 October 1994, col. 22, lines 2-65	1-24

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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Date of the actual completion of the international search 14 AUGUST 1998	Date of mailing of the international search report 08 OCT 1998
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